DOCKET FILE COPY ORIGINAL

North American Numbering Council
c/o Columbia Institute for Tele-Information
Columbia Business School
1A Uris Hall
3022 Broadway
New York, NY 10027-6902

RECEIVED
DEC 12 2002
Federal Communications Commission
Office of the Secretary

December 11, 2002

Mr. William M er
Chief, Wireline Competition Bureau
Federal Communications Commission
445 Twelfth Street, S.W.
Washington, D.C. 20554

Re: California PUC Petition for Waiver of Contamination Threshold Rule
(DA 02-2822, CC Docket No. 99-200)

Dear Mr. Maher:

On October 24, 2002 the Wireline Competition Bureau issued a Public Notice seeking comment on the petition of the California Public Utilities Commission (CPUC) for a waiver of the Federal Communications Commission's Contamination Threshold Rule **(DA** 02-2822, CC Docket No. 99-200). In the Public Notice, the Bureau directed the North American Numbering Council (NANC) to analyze the technical viability of the CPUC proposal. The Public Notice stated:

> ***"We seek comment on the California Commission'spetition. Specifically, we ask commenters to address the technical implications of increasing the contamination threshold to 25 percent, including specific impacts on local number portability. We ask the North American Numbering Council (NANC), the Commission's advisory committee on numbering issues, to evaluate the technical viability of increasing the contamination level, and to submit its findings to the Bureau no later than December 13. 2002."***

In response to this directive, NANC chartered an Issue Management **Group (IMG)** composed of experts drawn from NANC's members to evaluate the technical viability of increasing the contamination threshold. The IMG's report, which has been reviewed by NANC during a duly noticed telephone conference call meeting held on December 11, 2002. is attached.

The **IMG** was unable to draw a single conclusion and finding. Rather, the **IMG** considered different scenarios that use different assumptions and methodologies in an attempt to quantify the expected benefits to the life of California NPA's. This led the IMG to reach rather inconsistent conclusions based on the different results of two methodologies. One analysis (Analysis A) concludes that:

No of Copies rec'd 2
List ABCDE

> "...it would be difficult to cost justify expenditures to increase the contamination level from 10 percent to 25 percent. There is little if any increase to the life of the California NPAs that would support the additional economic burden ...Based on this analysis, increasing the contamination levels from 10 to 25 percent for the California NPAs is not technically viable."

However, the other analysis (Analysis B) concludes that:

> "...The viability of the California proposal to increase the contamination threshold must take into account the costs to consumers of area code relief, not just the costs to both carriers and consumers of increasing the contamination threshold.
>
> Analysis B demonstrates that the lives of all California NPAs would be extended, and additional CPUC analysis suggests that carriers would not have to draw down their six-month inventories to donate 10 to 25 percent contaminated blocks to existing number pools. Therefore, given the cost factors that have been considered and the benefits shown in Analysis B, it appears to be reasonable to recommend an increase in the contamination level in California as proposed in the CPUC petition."

The IMG report notes that the real benefits can only be determined when the actual quantity of blocks that would be donated back is established. Factors affecting donations, such as blocks held in allowable six-month inventories or blocks that are the sole resource in a rate center, are listed for the Commission's information. Rather than a specific recommendation, NANC is offering the IMGs report as a tool for the FCC to use in evaluating the CPUC's petition for waiver. The information it contains suggests areas for the FCC to take into consideration in assessing the waiver petition in addition to the quantitative analyses. Tables 1 and 2 included in the IMG report outline the range of potential benefits that could be achieved by raising the contamination threshold level to 25 percent. The Commission should take into account the totality of the report as well as the comments and replies from other stakeholders when reaching its decision.

I would like to acknowledge the significant amount of work undertaken by the IMG on behalf of the NANC and the Commission. The members of the IMG are included in the report.

If the Commission's staff requires further information about the IMG's report, I would recommend that they contact the IMG's Chair, Beth O'Donnell.

Sincerely.

Robert C. Atkinson

Robert C. Atkinson
Chairman

cc: NANC Members (w/out attachment)
Diane Griffin – FCC
Mark Seifert - FCC
Eric Einhorn - FCC
Cheryl Callahan - FCC
Sanford Williams - FCC
Deborah Blue – FCC

Report on the Technical Viability of Increasing the Pooling Contamination Threshold

December 6,2002

Prepared for the NANC
by the
Contamination Levels
Issue Management Group

Table of Contents

1. Executive Summary

The Federal Communications Commission (FCC) on October 24,2002 asked the North American Numbering Council (NANC) to evaluate the technical viability of increasing the contamination threshold for blocks to be donated to number pools from 10 to 25 percent. The request was made as a result of a waiver petition filed on September 5,2002 by the California Public Utilities Commission (CPUC). At its September 25,2002 meeting, in anticipation of FCC action, the NANC formed an Issue Management Group (IMG) to perform the evaluation.

The IMG met via conference call 11 times. The IMG differentiated viability from feasibility, first by looking at dictionary definitions then by listing attributes of viability in relation to the increased contamination level. Viable: Capable of working, functioning or developing adequately, capable of success. Feasible: Capable of being done or carried out. Benefits were measured in terms of extending the life of area codes and rate centers and retrieval of stranded numbers.

The IMG's evaluation consisted of listing the potential changes to existing processes and systems, and then rating the degree of difficulty or impact to accommodate an increase in the contamination level. Additional questions and answers were developed regarding items such as the universe of blocks eligible for donation, effects on the Pooling Administration System and Local Number Portability apparatus, and the number optimization benefits of a 25 percent contamination threshold.

To further explore the number optimization benefits, two analyses of the effect that the quantity of blocks identified with increased contamination level from 10 to 25 percent were presented to the IMG. Each analysis is summarized in the report; supporting documents are attached.

Analysis A calculates the additional lifespan of pooled NPAs in California that could be solely attributed to the donation of the 10-25 percent contaminated blocks. This analysis does not include remaining NXXs in the individual NPAs; it takes the current demand rate and applies it to the pools to which the blocks would be added. For the purposes of this analysis it is assumed that the NPAs listed have no NXXs left to assign, and that the 10-25 percent contaminated blocks are the only source of numbers for the pools. This analysis assumes that the first rate center to exhaust results in the exhaust of the NPA, because the NPA has no additional NXXs. Applying the forecasted demand rate, this analysis results in a range of 0 months to 9 months of further life for the various NPAs due to increasing the contamination threshold.

Analysis B also calculated the additional lifespan of pooled NPAs in California that could be solely attributed to the donation of 10 to 25 percent contaminated blocks *to* number pools. This analysis calculated the block inventories of all pooled rate centers into future years, beginning November 1,2002, assuming that the current supply of whole NXXs will be opened as needed to replenish rate centers depleted of donated blocks. This

analysis ran the simulation once for each **of** two scenarios: using the current 10 percent contamination threshold for block donations, and, using the proposed 25 percent contamination threshold for block donations.

In this analysis, the number pools will issue blocks and open NXXs **as** they do currently, assuming that the available nine months of pooling block forecasts provided to NeuStar Pooling Administration by carriers are accurate forecasts of their future needs. Applying the forecasted demand rate, this analysis results in a range of 1 month to 29 months of further life for the various NPAs due to increasing the contamination threshold.

The **JMG** offers this report **as** a tool for the FCC to use in evaluating the CPUC petition for waiver. The information it contains suggests areas for the FCC to take into consideration in assessing the proposal. The IMG examined cost factors but did not identify specific costs. Analysis A and Analysis B are offered as methods to quantify the potential benefits to number optimization; neither should be inferred to be the definitive answer for the FCC. The Commission should take into account the totality of the report **as** well **as** the comments and replies from other stakeholders when reaching its decision.

2. Background

The California Public Utilities Commission (CPUC) on September 5,2002 petitioned the Federal Communications Commission (FCC) for a waiver of the threshold rule applied to blocks donated to 1,000 Number Block number pools. The FCC set the threshold, or contamination level, for blocks to be donated at 10 percent in its March 1, 2000 Report and Order, and Further Notice **of** Proposed Rulemaking. The CPUC waiver petition asks the FCC to grant the CPUC discretion to raise the contamination level to 25 percent in various number pools in each of its NPAs. CPUC calculations, based upon NRUF data available in August 2002, show that statewide; approximately 7,000 additional blocks would become eligible for donation under the increased contamination level.

The FCC Wireline Competition Bureau issued a public notice on October 24,2002 seeking "Comment on the Petition **of** the California Public Utilities Commission and the People of the State of California for Waiver of the Federal Communications Commission's Contamination Threshold Rule." (DA 02-2822, CC Docket No. 99-200) In the Notice, the Bureau solicited the North American Numbering Council's (NANC) analysis of the technical viability of the CPUC proposal.

> ***"We seek comment on the California Commission's petition. Specifically, we ask commenters to address the technical implications of increasing the contamination threshold to 25 percent, including specific impacts on local number portability. We ask the North American Numbering Council (NANC), the Commission's advisory committee on numbering issues, to evaluate the technical viability of increasing the contamination level, and to submit its findings to the Bureau no later than December 13, 2002."***

The NANC in turn formed an Issue Management Group (IMG) to respond to the FCC. The Contamination Levels IMG met via conference call 11 times to pose questions, gather information, define the task and craft this report for the NANC.

3. Assumptions

The IMG is addressing the question of increasing the contamination level in California only.

The IMG is not assessing costs, only technical issues. However, areas in which carriers anticipate additional costs are identified.

According to August 2002 NRUF data, there were approximately 7,000 blocks with 10-25 percent contamination held by pooling carriers in California.

4. Defining the Task

The IMG discussed the methods and approaches necessary to evaluate the technical viability of increasing the contamination threshold. It concluded that there were two approaches that could be taken to determine the technical viability of increasing the pooled block contamination level from 10 percent to 25 percent. First, to review the technical feasibility of the petition's proposal; next, to determine the technical viability derived from such an increase in contamination levels. The IMG distinguished viability from feasibility, first by looking at dictionary definitions; it then listed attributes of viability in relation to the increased contamination level.

- **Viable:** Capable of working, functioning or developing adequately, capable of success.
- **Feasible:** Capable of being done or carried out.

5. Analysis

The IMG generally agreed that, with enough time and enough financial and human resources, increasing the contamination level for donated blocks from 10 to 25 percent would be technically feasible. However, the technical viability of such a measure requires additional analysis. As a result, the IMG agreed to assist the FCC by enumerating a list of cost-related issues to be considered and evaluated in determining the viability of the increased contamination proposal.

Success ultimately should be judged on whether the life of the area codes can be extended, whether numbers that would otherwise be stranded in carrier inventories can be returned for use, and whether those benefits are justified by the costs to accomplish them.

Technical viability was broken down by the IMG into the following preliminary categories and questions. The IMG estimated the impact of an increase in contamination on a scale of Low, Medium, and High.

Imulementation Timeline

- How long do carriers have to comply? ***(High)***
  A longer time frame to comply might increase the viability; a shorter time frame might decrease it.
- Reassessing inventory for possible donations. ***(High)***
  This is a resource intensive process related to time frame and rollout schedule. A longer time frame to comply might increase the viability; **a** shorter time frame might decrease it.

OSS changes

- How much time and money to develop and implement? ***(High)***
  This is a resource intensive process and costs will depend heavily upon the implementation timeframe. The shorter the development and implementation time frame the more expensive the project.
- To identify network and systems elements that must be modified? ***(Medium)***
  This is a resource intensive process and costs are heavily dependent upon the timeframe for implementation related to time frame allowed for network and systems required for modification. The shorter the time frame the more expensive the project.

EDR Imuacts

Storage Cauacitv of Local SMSs, SCPs

- How much is needed, are increases necessary? ***(Medium)***
  In the context of storage capacity, the extent of deployment of increased contamination levels impacts the proposal's viability. If the contamination levels pertain to a few blocks in a few NPAs, viability increases because presumably no change to storage capacity would be needed. On the other hand, if the contamination levels pertain to many blocks in many NPAs, viability decreases.

- Does EDR become less efficient and cost-effective? (*Medium/High*)
  In the context of EDR efficacy, the extent of deployment of increased contamination levels impacts the proposal's viability because it reduces the efficiency of EDR. If the contamination levels pertain to a few blocks in a few NPAs, viability increases. If the contamination levels pertain to many blocks in many NPAs, viability decreases.

Intra-Service Provider Porting

- Increased workload involved with increased intra-Service Provider ports ***(High)***
- This is a resource intensive process that increases risk of customer disconnects due to increase in intra-SP ports (port-back) ***(High)***

Increased opportunity for human error and negative customer impact decreases viability **of** the proposal.

Staaaered Rollout

- What is the implementation schedule and which NPAs would be involved? ***(High)***
  Fewer NPAs targeted on a longer time frame would increase viability; more NPAs targeted for a shorter time frame would decrease viability because of the increased workload due to more frequent replenishments.
  Note that the CPUC did not specify an implementation schedule in its petition.
- What is the practical impact on carriers and the Pooling Administrator? ***(Medium*** impact on carriers, ***Low*** impact on PA)
  Any need to replenish inventory levels more frequently than at the present threshold decreases viability; no change in current replenishment process increases viability.

Calculated Benefit:

- What is the actual quantity of blocks that would be donated at the higher contamination level? ***(High)***
  Determine the quantity of blocks/NXXs that **should** be excluded from the pool of eligible blocks that could be donated to the pool if the contamination level was raised to **25** percent in order to estimate the benefit derived.

6. Additional Considerations

The CPUC figure of 7,000 excludes paging carrier inventory, **as** well **as** blocks that were grandfathered for wireless customers/carriers during an NPA split. However, the quantity of blocks that are more than **10** percent but less than **25** percent contaminated which carriers are entitled to keep in their six-month inventories cannot be determined. The quantity of blocks which represent a carrier's sole resource in the rate center cannot be determined, nor can the quantity of blocks that are not poolable, (e.g., a block that contains an LRN is not poolable for technical reasons). **As** a result, the IMG agreed that the quantity of blocks that would be donated was likely to be somewhat less than the 7,000 originally identified in the CPUC petition.

The implication **of** including or excluding particular blocks is that the viability of increasing the contamination level is relative to the quantity of blocks ultimately retrieved. To illustrate, if the actual quantity of blocks donated is 1,000, the technical viability of increasing the contamination level would be lessened. Conversely, if the actual quantity of blocks is 6,000, the technical viability would be increased, since the chance for success **(as** measured by freeing stranded numbers and extending the life **of** NPAs) would be increased **as** well.

The IMG acknowledges that code supply and demand is always a dynamic process. Carriers return codes; business plans change; forecasts are readjusted continuously, new technologies are introduced. Because this analysis is static in nature, none of these factors are taken into account. Thus the lives of NPAs in California could in fact be extended further than concluded in either **of** this report's quantitative analysis. The IMG further notes that trends in demand on a rate center basis could be impacted due to the entry **of** wireless carriers to thousands block number pooling.

7. Assessment

The first step in determining the overall viability of increasing the contamination level to 25 percent is to calculate the benefit derived from having excess blocks returned to the shared industry inventory. The IMG formulated questions to estimate the benefits and then to determine the overall technical viability. IMG members **as** well **as** NeuStar participated in developing answers.

1. How many blocks in California are between 10 and 25 percent contaminated?

NeuStar identified 6,246 (from updated NRUF data available in November 2002; excluding paging and grandfathered codes).

For this analysis, the IMG agreed to use the CPUC figure of 7,000, which excluded paging carriers and others exempt from LNP, as well **as** grandfathered wireless NXXs. A more complete analysis would need to take into consideration non-poolable blocks, Type 1 Wireless (until 11/24/03), and blocks held in carrier six-month inventories.

2. How many of these blocks are held by service providers in their allowable six-month inventories?

The IMG was unable to answer this question because it is dependent on service provider specific data. However, the CPUC tested 15 NPAs by choosing one company in one rate center per NPA. The CPUC totaled the sum of assigned numbers **as** reported by the companies for the NRUF as of June 30,2001 and June 30,2002. Taking the difference between the two reported assigned numbers data on the two dates, the CPUC determined the actual 12-month usage. As a proxy for six-month usage, the CPUC divided the actual 12-month usage by 2. The CPUC then sorted the company's **block** holding by contamination level going from 100percent to 0percent contaminated. Taking a running balance of available numbers, the CPUC determined that companies in the sample could have met their six-month demand in the given rate centers without dipping into their 0 percent to 25 percent contaminated blocks. In fact, in six cases, the companies involved could have met their six-month demand by taking numbers only from blocks that were 90 percent **or** more contaminated. In another two cases, there was actually a decrease in assigned numbers between June 30,2001 and June 30, 2002.

NOTE: Demand is highly cyclical. Though the CPUC snapshot uses the only reliable NRUF data, the period involved represents a time of economic downturn during which the telecommunications industry was particularly hard-hit.

3. Is there any way to determine through NRUF an approximation of the percentage of these blocks that are held in six-month inventories?

The IMG agreed that there is no way to calculate a statewide percentage although individual carriers could review their inventories for blocks that would not be donated under an increased contamination level.

4. Would the additional contamination level have any impact on PAS or CAS?

NeuStar responded that there would be no impact on either system that would require change orders or additional costs.

5. What, if any, impact would blocks with increased contamination levels have on LNP?

An increase in pooling contamination levels will have a number pooling impact. Any additional storage required for the higher contaminated blocks will impact all national carriers, and regional carriers operating in California and the West Coast NPAC Region.

Because non-EDR carriers' **LSMSs** likely will be able to handle the smaller range broadcasts involved when a more highly contaminated pooled block is broadcast, there should be less LSMS recovery-related work imposed on the NPAC **as** a result of the pooled block broadcast.

5a. On the **LSMSs?**

IMG members and individual carriers are investigating LSMS requirements, however, NeuStar responded that the greater the contamination level, the fewer numbers are broadcast when the PA assigns the block. ***Also,*** each of the ranges involved in the block broadcast are smaller. As a result, broadcasts are more easily handled. **(For** Non-EDR Carriers)

5b. On the SCPs?

Additional storage capacity is required for the contaminated numbers ported back to the donor carrier. This storage capacity increase will require carriers to add additional capacity to their respective number portability/number pooling databases (SCPs). The 7,000 blocks identified by California are estimated to add an additional 1.05 million ported numbers stored in SCPs.

Increased contamination has no impact on a non-EDR SCP. However, for an EDR SCP the increased contamination means more individual ported number records must be created than otherwise would be necessary, thus reducing the benefit offered by the EDR design.

5c. On the costs for porting?

NeuStar responded that there is no difference in the charges associated with porting a slightly contaminated block versus porting a highly contaminated block.

NPAC pooling and porting charges, although the same per pooled block, will go up in total under an increased contamination plan because more blocks will ultimately be pooled. However, costs were deemed to be outside the scope of the JMG.

5d. On download speeds and EDR? (Would the slow horse problem be exacerbated?)
NeuStar indicated that smaller ranges for numbers broadcast for a pooled/ported block should help Non-EDR carriers' LSMSs accept pooled block broadcasts; the slow horse problem should not be exacerbated. However, it appears that the economic benefit of EDR would be reduced.

6. Will the addition of blocks with 10 to 25 percent contamination alleviate any strain on existing pools?

CPUC identified 43 rate centers where the forecasted demand exceeded donations and where strain could presumably be alleviated to varying degrees with the additional blocks.

7. Will raising the contamination level free up numbers that would otherwise be stranded?

Yes it could, depending on rate center specific information.

8. All of the area codes in CA are/will be in pooling by March 2003. Are all the 10-25 percent blocks in pools that have competitive demand for resources?

Pooling is in the top 100 MSA's and there is competition in those areas. Of the 750 rate centers in the state, approximately 712 have more than one carrier providing service. Note: Competition for resources is not the same as competition for service.

9. How should the NXXs that are grandfathered be accounted for in the overall total of 10-25 percent contaminated blocks?

Grandfathered NXXs cannot meet the requirements of all carriers operating in the rate center because of portability limitations. Initially, grandfathered NXX thousands blocks need to be captured and treated separately from the other NPA specific thousands blocks. This question cannot be answered fully until a decision is made on what to do with grandfathered codes. However neither the 78 grandfathered NXXs in California nor their associated blocks are included in this analysis.

10. Has NANPA ever performed an analysis of the impact of higher contamination levels on the life expectancy of NPAs?

No.

11. What is the impact of increased contamination on internal carrier systems/procedures involved in number administration?

All carriers have dedicated resources to complete the port back process for the contaminated numbers identified under number pooling. A manual porting back process is labor intensive. It is technically possible, but there are cost issues.

12. What is the impact of increased contamination on forecasted demand for pooled blocks?

Forecasting becomes more difficult because the reports are prepared in terms of 1000 blocks. At the present time, the Pooling Administrator counts a block as a block, regardless of the contamination level. For example, if Carrier A forecasts for 12 blocks (or 12,000 numbers), there is a possibility of receiving as few as 9,000 numbers if all blocks received are contaminated at the 25 percent level. While the numbers do not count against a carrier's inventory and utilization, there is no established method for compensating carriers in receipt of heavily contaminated blocks.

In addition since SPs would only be able to assume that 750 numbers were potentially available under the 25 percent contamination level, it is possible that more blocks may be forecasted to obtain the same quantity of numbers that would be obtained under the 10 percent contamination level.

8. Analysis A of NPA Life Extensions Due to Increased Contamination Threshold

The object of this analysis is to determine how long the life of a California NPA will last by increasing the contamination threshold from 10 percent to 25 percent. This analysis eliminates any external factors (e.g., existing blocks and NXX codes, returned codes) in determining a NPA's life. In Attachment 1, the contamination spreadsheet under column D shows the extension of the life of the NPA using the blocks from the **10-25** percent contamination ranges.

Assumptions:

1) Analyze how long the NPA will last beyond the exhaust of the last NXX in the NPA to determine the value of any proposed expenditure to implement this approach.
2) Use the demand for the 8-month period (column F) shown in the spreadsheet as the forecasted demand going forward
3) Calculate the months to exhaust dividing the new 10-25 percent contamination blocks (column J) by the forecasted demand (column F) divided by 8 months to determine the months to exhaust per rate center.
4) The first rate center to exhaust in the NPA determines the life of the NPA because all external factors to extend the life of the NPA have been removed. This is a purest analysis approach in determining the life of an NPA.

TABLE 1

NPA	Rate Center	# of Carriers	10% - 25% Blocks Months to Exhaust
209	TOTAL		0
213	TOTAL		8
310	TOTAL		1
323	TOTAL		2
408	TOTAL		0
415	TOTAL		4
510	TOTAL		3
530	TOTAL		0
559	TOTAL		3
562	TOTAL		4
619	TOTAL		0
626	TOTAL		3
650	TOTAL		3
661	TOTAL		0
707	TOTAL		0
714	TOTAL		2
760	TOTAL		0
805	TOTAL		0
818	TOTAL		1
831	TOTAL		9
858	TOTAL		3
909	TOTAL		1
916	TOTAL		3
925	TOTAL		3
949	TOTAL		6

Note: The analysis only uses "NPA" and the "10- 25 percent Blocks Months to Exhaust" columns from Table 1. Please ignore other columns or refer to Attachment 1 for more details.

Initial Analysis

Using Table 1 (information that was taken from Attachment 1) it appears that most NPAs exhaust immediately with 3 NPAs lasting 6, 8, and 9 months. Eight of the 22 NPA exhaust immediately.

9. Analysis B of NPA Life Extensions Due to Increased Contamination Threshold

The object of this analysis is to determine how long the life of each California NPA would be extended by increasing the pooling contamination threshold from 10 percent to 25 percent. This analysis considers all factors, for which data is available, that may influence the outcome (e.g., current supplies of pooled 1,000-blocks and of whole NXX codes) to determine each NPA's life. Attachment 2, the contamination spreadsheet, shows the projected life of each NPA under current pooling rules (base case), and under a 25 percent contamination threshold for pooling. The difference between these two scenarios is our best estimate of the amount of time each NPA's life would be extended by increasing the pooling contamination threshold from 10 to 25 percent. The length of life extension gained by each NPA is an important factor in judging the size of the benefits that could be realized by raising the pooled block contamination threshold from 10 to 25 percent.

Assumptions;

1) Supply and demand of pooled blocks takes place at the rate center level, thus all calculations of block supply and demand are done at the rate center level. Pooled blocks are not shifted between rate centers.

2) The demand for pooled blocks for the 9-month period from November 2002 through July 2003, as forecasted by carriers and submitted to Neustar Pooling Administration, is representative of the future demand for blocks. The block demand forecasts are contained in column F of the detail spreadsheets. The rates of demand indicated by these forecasts occur evenly over time.

3) The supply of assignable whole NXXs remaining in each NPA is calculated from data provided by Neustar, and is shown on sheet "2002" in the attached spreadsheet.

4) The blocks available for pooling in each rate center are used as required each period to meet forecasted demand. When blocks available drop below zero, one or more whole NXXs are opened and 10 blocks per opened NXX are added to the depleted rate center's block supply.

5) Block inventory calculations are done annually until the last year of projected life of the NPA, and monthly thereafter until exhaust.

6) When an NPA's supply of remaining whole NXXs drops to zero or below, the NPA is exhausted.

7) Calculations are summarized on sheet "Summary" of the attached spreadsheet, which is shown below as Table 2. The details of the Base Case calculations are contained on sheet "MTE Base Case". The details of the 25 percent

Contamination Threshold case are contained on sheet "MTE w. 10-25 percent".

NPA	Base Case Months to Exhaust	10 - 25% Contam. Months to Exhaust	NPA Life Extension Due to 10 - 25% Contam. (Months)
209	11 Yrs, 3 Mos	11 Yrs, 11 Mos	8
213	31 Yrs, 9 Mos	34 Yrs, 2 Mos	29
310	0 Yrs, 5 Mos	0 Yrs, 7 Mos	2
323	3 Yrs, 9 Mos	4 Yrs, 2 Mos	9
408	3 Yrs, 3 Mos	3 Yrs, 10 Mos	7
415	4 Yrs, 4 Mos	5 Yrs, 1 Mo	9
510	2 Yrs, 10 Mos	3 Yrs, 4 Mos	6
530	14 Yrs, 1 Mo	15 Yrs, 2 Mos	13
559	9 Yrs, 6 Mos	10 Yrs, 3 Mos	9
562	9 Yrs, 8 Mos	10 Yrs, 6 Mos	10
619	7 Yrs, 6 Mos	8 Yrs, 2 Mos	8
626	8 Yrs, 3 Mos	8 Yrs, 12 Mos	9
650	9 Yrs, 5 Mos	10 Yrs, 1 Mos	14
661	NA	NA	NA
707	5 Yrs, 2 Mos	5 Yrs, 9 Mos	7
714	1 Yr, 5 Mos	1 Yr, 8 Mos	3
760	2 Yrs, 7 Mos	3 Yrs	5
805	5 Yrs, 7 Mos	6 Yrs, 3 Mos	8
818	2 Yrs, 7 Mos	2 Yrs, 11 Mos	4
831	36 Yrs, 6 Mos	37 Yrs, 2 Mos	8
858	21 Yrs, 1 Mo	21 Yrs, 12 Mos	11
909	0 Yrs, 6 Mos	0 Yrs, 7 Mos	1
916	9 Yrs, 2 Mos	10 Yrs, 3 Mos	13
925	10 Yrs, 1 Mo	10 Yrs, 9 Mos	8
949	14 Yrs, 4 Mos	15 Yrs, 2 Mos	10
		min	1
		max	29
		mean	9

TABLE 2

In Table **2** we see that the extensions of NPAs' lives estimated to occur **as** a result of increasing the pooling contamination threshold to **25** percent range from 1 month to **29** months, with a mean life extension of **9** months. **Four** of the **NPAs** get life extensions of over a year, and **20** NPAs have their lives extended **less** than a year.

10. Findings and Conclusion A

The IMG generally agreed that, with enough time and enough financial and human resources, increasing the contamination level for donated blocks from 10 to **25** percent would be technically feasible. However, the technical viability of such a measure requires additional justification, since there are considerable efforts that **are** required to make this proposal viable. As a result the IMG is providing the FCC a list of cost related issues that should be considered and evaluated in determining the viability of the increased contamination proposal.

To increase the chances of making this **25** percent contamination proposal more viable some of the areas that were estimated to involve a high level of cost and effort were:

- Changes to ***OSS***
- Reassessing number inventory for possible donations
- Determining the quantity of blocks that would be eligible to be donated at **25** percent level
- Extending the time to implement the change
- Increased workload involved due to more Intra – Service Provider ports
- Impacts on EDR

By assessing the costs in these areas versus the benefits gained from obtaining additional blocks for pool donations the cost benefit of this proposal can be derived.

The FCC asked the NANC to analyze the technical viability of increasing the contamination level for donated blocks in California from **10** to **25** percent. Viability includes the potential for success. Whether or not increasing contamination levels is successful in extending the life of NPAs and liberating stranded numbers is difficult to determine without knowing how many blocks actually will be donated and where those donations will occur. Based on Analysis A it would be difficult to cost justify expenditures to increase the contamination level from 10 percent to 25 percent. There is little if any increase to the life of the California NPAs that would support the additional economic burden that would be placed on the consumers in California. Any costs to implement the increased contamination level would have to be passed on to the consumers of California. Based on this analysis, increasing the contamination levels from 10 to *25* percent for the California NPAs is not technically viable.

From this high level Analysis A generated from data provided by the CPUC and agreed to by the IMG, upon blocks available etc. in the various California rate centers pools, it has been determined that increasing the contamination level to **25** percent would lead in

the best case to the extension **of** the life of one NPA by 9 months. The great majority of NPAs would receive minimal if any extended life. If the demand forecasts significantly underestimate carriers' actual future block needs, then these projections of NPA life extensions are overstated. As noted in the report, demand is highly cyclical. Any increase in demand, whether caused by an economic upturn or introduction of new technologies that draw on the numbering resource, would further diminish the utility of increasing the contamination threshold. Therefore, given the cost factors that have been considered and the benefits shown in Analysis A, it does not appear reasonable to recommend an increase in the contamination level in California **as** proposed in the CPUC petition.

11. Findings **and** Conclusion **B**

The ***IMG*** concluded that increasing the contamination level for donated blocks from 10 to ***25*** percent is technically feasible. In general terms, the IMG reviewed the efforts and costs that would be incurred to implement this proposal in California, but did not develop any specific estimates of the costs that carriers would incur. Indeed, at the outset it was agreed that cost would not be a factor in the analysis, although it also was agreed that it would be appropriate to identify factors that have associated costs, and the report identifies those factors. **As** part of the discussion, NeuStar evaluated other potential impacts, and stated that increasing the contamination threshold would have no impact on either CAS or PAS that would require change orders or additional costs to accomplish.

OSS changes were identified as having a high impact on implementation costs, but the changes and costs were not specifically enumerated. Similarly, an increased pooling contamination threshold was identified as having a medium/high impact on costs by making EDR less efficient, but the scope of any potential **loss** of efficiency was not specified.

The actual quantity of blocks that would be donated at the higher contamination threshold is a factor that will have a high impact on viability of the proposed change. In evaluating viability of the proposal, the IMG identified **as** an issue the potential number of **10** to **25** percent contaminated blocks that might be held in carriers' six-month inventories. The CPUC performed an analysis of NRUF data to estimate the size of carriers' six-month inventory needs in sample rate centers, and the percentage of these needs that carriers could meet from blocks contaminated more than **25** percent. The results show that carriers could meet most if not all of their inventory needs without drawing on any of the identified **10-25** percent contaminated blocks, thus leaving the majority of these blocks available for donation to pools.

Analysis B involved an examination of NXX usage in every NPA in California, by rate center, and includes **an** assumption that existing NXX codes available in each of those NPAs would be used before the NPA exhausts. Based on this detailed review, Analysis B indicates that increasing the contamination threshold to **25** percent would extend the lives of each NPA in California, including an extension of the lives of four NPAs by over a year. The life of one NPA would be extended by almost two-and-a-half years. If block

demand forecasts significantly overestimate carriers' actual future block needs, then these projections of NPA life extensions are conservative. The CPUC has presented to the NANC periodic reports on the progress of pooling in California. Those reports have shown consistently that wireline carriers are taking one-quarter to one-third of their forecasted blocks. Consequently, the actual NPA life extensions brought about by the proposed higher pooling threshold could be much greater than those presented here.

Finally, this proposal is intended to defer the need to implement new area codes. The costs to the public of undergoing an area code change, whether an overlay or a split, require the public to adjust to the change. Some of those adjustments, such as adapting to 10-digit dialing, have a societal cost but not a fiscal cost, which cannot be quantified. In addition, a split, which California policy favors, has even more associated costs. The viability of the California proposal to increase the contamination threshold must take into account the costs to consumers of area code relief, not just the costs to both carriers and consumers of increasing the contamination threshold.

Analysis B demonstrates that the lives of all California NPAs would be extended, and additional CPUC analysis suggests that carriers would not have to draw down their six-month inventories to donate 10 to *25* percent contaminated blocks to existing number pools. Therefore, given the cost factors that have been considered and the benefits shown in Analysis B, it appears reasonable to recommend an increase in the contamination level in California as proposed in the CPUC petition.

IMG Members

Barry Bishop, NeuStar
Beth O'Donnell, Cox Communications
Bob Benjamin, CPUC
Cherrie Conner, CPUC
Deborah Bell, SBC
George Guerra, SBC
Helen Mickiewicz, CPUC
Hoke Knox, Sprint
Joe Cocke, NeuStar
Karen Mulberry, WorldCom
Lori Messing, CTIA
Michael O'Conner, Verizon
Norman Epstein, Verizon
Pamela Connell, AT&T
Rick Theiss, Verizon
Shannon Collins, NeuStar
Steve Addicks, NeuStar
Sue Wong, CPUC

Appendix A										
10% to 25% Contamination by Rate Center										
Excludes Paging Carriers										
Data as of 6/30/02										
NRUF Version dated 9/11/02										
			10% - 25%		Forecasted				# of Blocks	# of Carriers
			Blocks	Blocks Available	Demand for	Blocks Available on			10% to 25%	Holding
			Months	In Number Pool	Nov 02 through Jul 03	11/7/02 Less	# of Blocks		Less	10% to 25%
NPA	Rate Center	# of Carriers	to Exhaust	11/7/2002	as of 11/7/02	Forecasted Demand	10% TO 25%	Grandfathered	Grandfathered	Blocks
209	TOTAL		0	1050	194		204		195	
213	TOTAL		8	295	89		304		296	
310	TOTAL		1	677	680		259		259	
323	TOTAL		2	1302	503		363		363	
408	TOTAL		0	491	327		286		273	
415	TOTAL		4	833	283		299		299	
510	TOTAL		3	722	468		395		395	
530	TOTAL		0	1289	137		292		292	
559	TOTAL		3	891	227		346		346	
562	TOTAL		4	949	242		427		425	
619	TOTAL		0	632	291		244		244	
626	TOTAL		3	829	297		337		337	
650	TOTAL		3	997	208		359		359	
661	TOTAL		0				232		232	
707	TOTAL		0	1450	325		297		297	
714	TOTAL		2	751	636		254		254	
760	TOTAL		0	1299	476		394		392	
805	TOTAL		0	1083	281		308		304	
818	TOTAL		1	844	423		243		239	
831	TOTAL		9	496	102		179		179	
858	TOTAL		3	654	171		176		176	
909	TOTAL		1	1056	770		[illegible]		282	
916	TOTAL		3	781	182		[illegible]		288	
925	TOTAL		3	1094	239		320		320	
949	TOTAL		6	472	198		222		222	
							7310	-43	7267	
									7267.5	

	A	B	C	D	E	F	G	H	I	J
64				10% - 25%	Blocks	Forecasted	Blocks Avail.			# of Blocks
65				Blocks	Available In	Demand for	On 11/7/02 Less			10% to 25%
66				Months	Number Pool	Nov 02 - Jul 03	Forecasted	# of Blocks	Grand-	Less Grand-
67	NPA	Rate Center	#of Carrlers	to Exhaust	11/07/02	as of 11/7/02	Demand	10% TO 25%	fathered	fathered
68	213	LSAN DA 01	32	55	154	31	123	215		215
69	213	LSAN DA 07	22	7	60	31	29	28		28
70	213	LSAN DA 10	23	16	81	27	54	53		53
71	213	CMTN GRDN					0	8	-8	0
72	213	TOTAL		7	295	89		304		296
73										
74										
75				10%-25%	Blocks	Forecasted	Blocks Avail.			# of Blocks
76				Blocks	Available In	Demand for	On 11/7/02 Less			10% to 25%
77				Months	Number Pool	Nov 02 - Jul 03	Forecasted	#of Blocks	Grand-	Less Grand-
78	NPA	Rate Center	#of Carriers	to Exhaust	11/07/02	as of 11/7/02	Demand	10% TO 25%	fathered	fathered
79	310	AVALON	3	16	6	1	5	2		2
80	310	BEVERLYHLS	21	8	94	31	63	31		31
81	310	CMTN CMTN	10	13	28	7	21	11		11
82	310	CMTN GRDN	17	1	61	191	-130	26		26
83	310	CULVERCITY	10	2	34	54	-20	13		13
84	310	EL SEGUNDO	12	8	41	20	21	21		21
85	310	HAWTHORNE	6	19	31	5	26	12		12
86	310	INGLEWOOD	16	4	54	43	11	21		21
87	310	LOMITA	5	5	10	3	7	2		2
88	310	MALIBU	5	6	24	7	17	5		5
89	310	REDONDO	9	34	68	4	64	17		17
90	310	SAN PEDRO	7	2	16	34	-18	10		10
91	310	SNMN MRVS	14	3	29	52	-23	19		19
92	310	SNMN SNMN	20	1	58	138	-80	22		22
93	310	TORRANCE	13	3	64	42	22	17		17
94	310	W ANGELES	17	5	59	48	11	30		30
95	310	TOTAL		1	677	680		259		259
96										
97										

	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
64															
65		Blks. Avail.	Blocks	Annual	1		2		3		4		5		6
66		Fr.Whole	In Pool	FcasId		Blocks		Blocks		Blocks		Blocks		Blocks	
67		Prefixes		Demand	Y1	Replnshd	Y2	Replnshd	Y3	Replnshd	Y4	Replnshd	Y5	Replnshd	Y6
68	LSAN DA 01		154	41.3	112.7	0	71.3	0	30.0	0	(11.3)	20	(32.7)	40	(34.0
69	LSAN DA 07		60	41.3	18.7	0	(22.7)	30	(34.0)	40	(35.3)	40	(36.7)	40	(38.0
70	LSAN DA 10		81	36.0	45.0	0	9.0	0	(27.0)	30	(33.0)	40	(29.0)	30	(35.0
71	CMTN GRDN		0	0.0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
72		3,480		Cum. Blks Replnshd		0		30		100		200		310	
73				Blocks remaining		3,480		3,450		3,380		3,280		3,170	
74															
75															
76		Blks. Avail.	Blocks	Annual	1										
77		Fr.Whole	In Pool	Fcastd		Blocks		Monthly		Blocks		Blocks		Blocks	
78		Prelixes		Demand	Y1	Replnshd		Demand	M1	Replnshd	M2	Replnshd	M3	Replnshd	M4
79	AVALON		6	1.3	4.7	0		0.11	5.9	0	5.8	0	5.7	0	5.6
80	BEVERLYHLS		94	41.3	52.7	0		3.44	90.6	0	87.1	0	83.7	0	80.2
81	CMTNCMTN		28	9.3	18.7	0		0.78	27.2	0	26.4	0	25.7	0	24.9
82	CMTNGRDN		61	254.7	(193.7)	200		21.22	39.8	0	18.6	0	(2.7)	10	(13.9
83	CULVERCITY		34	72.0	(38.0)	40		6.00	28.0	0	22.0	0	16.0	0	10.0
84	ELSEGUNDO		41	26.7	14.3	0		2.22	38.8	0	36.6	0	34.3	0	32.1
85	HAWTHORNE		31	6.7	24.3	C		0.56	30.4	0	29.9	0	29.3	0	28.8
86	INGLEWOOD		54	57.3	(3.3)	10		4.78	49.2	0	44.4	0	39.7	0	34.9
87	LOMITA		i 0	4.0	6.0	0		0.33	9.7	0	9.3	0	9.0	0	8.7
88	MALIBU		24	9.3	14.7	0		0.78	23.2	0	22.4	0	21.7	0	20.9
89	REDONDO		68	5.3	62.7	0		0.44	67.6	0	67.1	0	66.7	0	66.2
90	SANPEDRO		16	45.3	(29.3)	30		3.78	12.2	0	8.4	0	4.7	0	0.9
91	SNMNMRVS		29	69.3	(40.3)	50		5.78	23.2	0	17.4	0	11.7	0	5.9
92	SNMNSNMN		58	184.0	(126.0)	130		15.33	42.7	0	27.3	0	12.0	0	(3.3
93	TORRANCE		64	56.0	8.0	0		4.67	59.3	0	54.7	0	50.0	0	45.3
94	W ANGELES		59	64.0	(5.0)	10		5.33	53.7	0	48.3	0	43.0	0	37.7
95		80		906.7		470		75.56		0		0		10	
96				Blocks remaining		switch to monthly				80		80		70	
97				Cum. Blks Replnshd											

	AA
64	
65	
66	Blocks
67	Replnshd
68	40
69	40
70	40
71	0
72	430
73	3,050
74	
75	
76	
77	Blocks
78	Replnshd
79	0
80	0
81	0
82	20
83	0
84	0
85	0
86	0
87	0
88	0
89	0
90	0
91	0
92	10
93	0
94	0
95	40
96	40
97	